

Piping Plover



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COSEWIC categories

VULNERABLE species are at risk because of low numbers or restricted range and therefore, although not in immediate danger, could be at any time.

THREATENED species are likely to become endangered if the pressures from human or natural causes are not reversed.

ENDANGERED species are threatened with immediate extinction or extirpation.

EXTIRPATED species are no longer found in the wild in Canada, although they exist elsewhere.

EXTINCT species no longer exist anywhere.

The Piping Plover *Charadrius melodus* is a small attractive bird of lakeshores, river sand bars, and ocean coasts. It nests on sandy or gravelly beaches and feeds at the water's edge. Unlike most shorebirds, which journey to remote arctic and subarctic areas to breed and then may winter as far afield as South America, the Piping Plover breeds and winters primarily in the temperate regions of North America, where much of the habitat that meets its very specific needs is being put to human uses.

Information on the size of Piping Plover populations in the past is limited, as relatively few surveys were carried out before the 1980s. Only one international census has been carried out, in 1991; however, a second census planned for 1996 will show whether the population size has changed. Nevertheless, researchers believe that numbers are dropping in parts of the plover's range. Because of population declines and threats posed by predators and by human use of its habitat, the Piping Plover is officially designated as "endangered" in Canada.

General description

On a beach the Piping Plover blends well into its surroundings: its head and back are the colour of dried sand, and it has a white rump, a partially black tail, a black band above its white forehead, and a single, black "belt" or breastband (also referred to as a collar or neckband) that contrasts with its white breast and abdomen. Its bright orange legs match its orange, black-tipped bill. Adults weigh from 43 to 64 g and are about the size of a bluebird. Both sexes are similar in appearance; however, males tend to have broader and more distinct black bands on the head and breast than females. The adult winter plumage, which is indistinguishable from that of the juvenile plumage, lacks the black head and breast bands. Orange legs distinguish the Piping Plover from other plover species on the wintering grounds.

Piping Plovers may live as long as 14 years; however, most probably survive less than 5 years. They feed on aquatic and terrestrial invertebrates that they capture with their bill by alternately

running and pecking or probing along river, lake, and ocean shores.

This plover is the rarest of six "belted" plover species found in North America. The most well known of these plovers is the "double-belted" Killdeer *Charadrius vociferus*, which many people associate with the broken wing act that it puts on when an enemy gets too close to its nest or young. The single band, or "belt," of the smaller Piping Plover tends to be more incomplete in coastal birds and complete in interior birds. Some scientists have considered this feature and geographic distribution to be the basis for dividing the Piping Plover into two subspecies; however, a recent genetic study does not support this opinion.

Distribution and habitat

The Piping Plover nests in only three geographical areas in North America. It breeds along the Atlantic coast from Newfoundland to South Carolina, on the American shores of the Great Lakes (Michigan), and throughout the Great Plains (Prairie Provinces to Nebraska). Piping Plovers have been extirpated as a breeding species from the Canadian shores of the Great Lakes. On the east coast, plovers nest on sandy or gravel-sand beaches, particularly those overwashed by past storms. On the prairies most breed on gravel backshores of shallow, saline lakes, and a few on sandy shores of larger prairie lakes. Others use river sandbars. The plover's nesting habitat is not stable, as its availability depends on water levels and plant encroachment. Human-altered habitats (e.g., parking lots) have also been used by plovers. Artificial sites are not commonly used, and nest success is lower there than in natural habitats, as evidenced at sites in the United States.

Piping Plovers spend only 3–4 months on the breeding grounds before beginning their migration to their winter haunts in July to September. Little is known about their migration behaviour; however, on the wintering grounds, one study showed that most plovers tend to return for at least part of the winter to the area they inhabited the previous year. From September to April, inland populations can be found wintering along the coast of the Gulf of Mexico from Florida to Mexico. Some Atlantic birds winter along the southern Atlantic seacoast of the United States, primarily from North Carolina to Florida. Plovers have also been sighted on some of the Caribbean islands. On the wintering grounds, Piping Plovers spend most of their day feeding along sandflats or beaches. The amount of time they spend feeding tends to increase when temperatures decrease and tide levels subside. By late April, most plovers have left the southern climes for their northern breeding grounds.

Courtship and territorial behaviour

Each spring, Piping Plovers arrive on Canadian breeding grounds in late April or May. Shortly thereafter males begin flight and ground displays in their efforts to establish a territory and attract a mate. The plover's classic aerial display involves a complex flight with slow exaggerated wingbeats accompanied by rapid persistent calling over

Distribution of the Piping Plover



feeding and nesting habitat. These flights may reach heights of 35 m and can continue for as long as half an hour. On the ground, males chase each other with their backs hunched and head lowered, or run parallel to each other along invisible territory borders as they try to settle boundary disputes. Territory size is variable, ranging from 500 to 51 000 m². Males call vigorously while scraping shallow depressions with their feet in sand or sand-gravel substrates. Females inspect scrapes, perhaps for their suitability as a nest site, while males stand in or next to the depressions with partially outstretched wings and fanned tails. Small pebbles, seashell bits, or bone fragments are tossed toward the scrape and eventually form the lining of the nest. The male courts the female using high marching-like steps and an exaggerated upright body posture. Mating usually takes place on the nesting territory.

Nesting and chick rearing

Female Piping Plovers usually lay four pale buff-coloured, black-speckled eggs during early May. The eggs, averaging 32 mm × 25 mm, are laid on alternate days in a sand or pebble-lined nest with their pointed ends toward the centre of the nest. Both sexes share incubation duties, which last about 26–28 days. Most successful eggs hatch within 4–8 hours of each other in June. The downy young emerge and leave the nest within hours of drying off. Chicks feed on their own, but are carefully guarded by both parents. During inclement weather, chicks seek refuge and warmth under the adults. When danger arises, young plovers freeze in a crouched position, making them difficult to locate among the sand and gravel. The female abandons the family, usually by mid-July, leaving the male to care for the young until the family disperses. Young are capable of making short flights at about 20–25 days of age and are able to maintain flight by 27 days of age. They may arrive on the wintering grounds as early as late August.

Females are capable of nesting when they are one year old and may reneest once or twice if their eggs are destroyed, but they rear only one brood per year. Piping Plovers usually keep the same mate during the breeding season, but may switch partners after nest failure. Most plovers select new mates during the next nesting season.

Anywhere from 2 to 70% of the young that fledge return to where they were raised. This wide range probably reflects wide dispersal and/or a high death rate among young plovers in their first year. In contrast, 25–84% of breeding plovers return to the area where they nested in a previous year.

Threats

Enemies of the Piping Plover include both birds and mammals. The Piping Plover's plumage coloration helps it to blend in with its natural environment and thereby helps to hide it from predators. When disturbed, Piping Plovers silently slip off their nests and walk away from approaching intruders. In order to distract a potential predator, the plover may pretend to be

injured as it leads the enemy away from its nest. Gulls, crows, raccoons, foxes, and skunks are a threat to the eggs, and falcons may prey on the birds.

All-terrain vehicles, swimmers, and beachcombers disturb Piping Plovers and may damage their nests and eggs and interrupt foraging of plover chicks. Studies show that fewer young are raised on beaches that are popular for recreation, compared with beaches with less disturbance. Threats to Piping Plovers also include cattle trampling of nesting and brood-rearing habitat as the animals approach the water's edge for a drink, and the reduction in nesting habitat in high-water years as a result of dams. On the plover's wintering grounds in the southern United States, urban and industrial development threaten beaches where plovers feed.

Status and conservation

Hunting contributed to the plover's decline in the 19th century, but populations rallied after protection was afforded by the Migratory Birds Convention Act of 1917. Several factors may be involved in regional declines, including human disturbance, loss of habitat, and predation. Evidence of widespread decline in the Piping Plover population contributed to the decision in 1985 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to classify this bird as an endangered species in Canada. In 1986, the plover's status in the United States became officially known as "endangered" in the Great Lakes and "threatened" on the Great Plains and the Atlantic coast.

The plover's future is threatened. A study examining Piping Plover reproduction on the Canadian prairies and the American Great Plains suggests that the plover may not be producing enough young to maintain a stable population. On the Atlantic coast, predation and human recreational activities are contributing to nesting losses. The forecast climatic warming of the atmosphere, or "global warming," may reduce the plover's habitat by causing drought on the prairies and flooding on the Atlantic coast.

The 1991 North American population census resulted in the finding of about 5480 adults, of which 1950 adults (36%) occurred in Canada. In the Atlantic coast region of Canada, there were about 510 adults in 1991, whereas the Canadian prairie population numbered about 1435 adults. The breeding population of Piping Plovers can vary from one year to another depending on various factors including habitat availability.

Both the Canadian Wildlife Service and the United States Fish and Wildlife Service, in cooperation with provinces, states, and other agencies, have developed recovery actions to try to maintain or increase the plover's numbers. Various conservation measures, such as signs, patrols, nest exclosures, surveys, and public education, by nongovernment organizations, provincial wildlife agencies, Parks Canada, and the Canadian Wildlife Service have contributed to attempts to protect this plover. The Western Hemisphere Shorebird Reserve Network, an international program designed to promote

shorebird conservation, has initiated a Piping Plover Registry to recognize landowners and managers who are trying to conserve this shorebird. Research by government and university biologists has aided our understanding of the plover's biology and population dynamics. This knowledge, combined with the help of a conservation-minded public and wise land management by landowners, will help ease the plover's plight.

What you can do to help the Piping Plover

If you live near or visit a beach where Piping Plovers nest you can help the plover by not disturbing nests and by informing others about the Piping Plover and its plight. Keeping your pet dog or cat off such beaches will also help reduce disturbance of and predation on Piping Plovers. In Prince Edward Island, Nova Scotia, and Manitoba there is a volunteer guardianship program, that, in addition to the guarding of nests, helps to inform the public about the species.

No matter where you live, you can contribute to the conservation of the Piping Plover and its habitat by supporting conservation organizations. Combatting inadequate disposal of garbage helps the plovers indirectly, because gulls that could eat Piping Plover eggs are increasing in numbers largely because of the extra food that humans make available to gulls.

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The Canadian Wildlife Service

The Canadian Wildlife Service of Environment Canada handles wildlife matters that are the responsibility of the Canadian government. These include protection and management of migratory birds as well as nationally significant wildlife habitat. Other responsibilities are endangered species, control of international trade in endangered species, and research on wildlife issues of national importance. The service cooperates with the provinces, territories, Parks Canada, and other federal agencies in wildlife research and management.

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